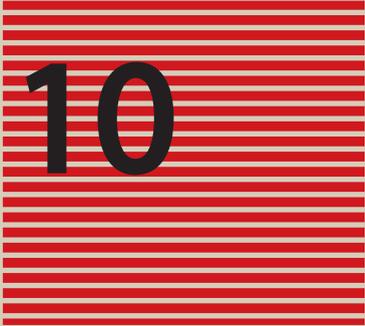


# Water resource management

- Introduction
- Administrative responsibilities for water resource management
- Legal framework
- The Water Resources Act
- Ground water
- Preserving installations in watercourses as part of the cultural heritage
- The Water Framework Directive



10

## 10.1 Introduction

River systems and their associated lakes and wetlands are complex systems, with a flora and fauna characterised by great diversity and numbers of species. Ecological conditions in a river system change from the mountains to the sea. River systems support a rich algal flora and many types of bottom-dwellers (benthic species). In addition to fish and other species which live in the water, river systems are very important to a number of birds and mammals.

Norway has a great many rivers and waterfalls. These are of very important both to commercial interests and for community purposes such as outdoor recreation. A number of local communities have grown up around the commercial utilisation of rivers.

Many interests collide over the exploitation of river systems. Water supply is the oldest known form of utilisation, and remains the most important. Otherwise, fishing, timber floating, transport, irrigation, water-driven flour and saw mills and, more recently, hydropower generation are the best-known and most widespread uses. Electricity generation is the most important economic application of Norwegian river systems today. See chapter 2. The importance of the various uses varies from one river to another, and user interests have also changed over time.

A watercourse belongs to the owner of the land it runs through. Both with respect to neighbouring properties and the public interest, important limitations are placed on the use of watercourses.

Use of water resources for agriculture is a central issue. Agriculture occupies a special position for the use of river systems. Important applications include irrigation and drinking water, property boundaries and natural barriers for livestock. Landowners can abstract water from a river system on their property

without a licence for household and livestock use. These applications also take priority in the event of water shortages. Bathing, boating and angling are important recreational activities in river systems, and also represent nature experiences of great importance for tourism in Norway.

Watercourses have been subject to a number of changes and measures which influence their condition. Human intervention can have both positive and negative effects in this context.

## 10.2 Administrative responsibilities for water resource management

Hydrology deals with the distribution, movement and effects of water in the environment. The hydrology department at the Norwegian Water Resources and Energy Directorate (NVE) studies the hydrological cycle, and its work provides the basic knowledge required for water resource management.

Flood forecasting, measures to prevent erosion, construction of flood protection works and clearing watercourses are important management tasks. Another important job relates to measures for adjusting biotopes, or habitat restoration, which are often required after earlier developments. The NVE also conducts extensive research and development in disciplines within its sphere of responsibility.

Norway has many reservoirs used to store water for such purposes as electricity generation and water supply. The water authorities are responsible for safety and inspection of such facilities and associated installations. The safety department of the NVE carries out inspections and provides advice and training on dam safety.

One of the most important jobs of the water resource authorities (the NVE and the Ministry of Petroleum and Energy) is processing licence applications for measures subject to the legislation on water resources.

### 10.3 Legal framework

#### 10.3.1 Water resources legislation

Legislation relating to water resources has roots which extend back to Norway's 12th-century provincial laws. These were based on the principle of private ownership, but also imposed clear restrictions on what owners could do, particularly in relation to fisheries. Most of these regulations were continued by Christian V in the Norwegian Law of 1687. Consideration of the technical and economic innovations during the 1800s, lead to the appointment of a commission that laid the foundations of the Watercourses Act of 1887. This is the first law that can be said to be the direct progenitor of today's laws in this area. It was replaced by the 1940 Watercourses Act. In 1990, a commission was appointed to draw up proposals for a new Act. On 1 January 2001, the Water Resources Act came into effect; and is the general statute governing Norway's fresh water resources including ground water. See the more detailed discussion in section 10.4 below.

#### 10.3.2 The licensing system pursuant to the Water Resources Act

The special licensing systems for works in watercourses date from the beginning of the 20th century. Advance public control through the requirement to secure a licence ensures an individual assessment of the legality and impact of each project. The Water Resources Act is the general statute governing water resource management. The require-

ment to obtain a licence pursuant to this Act applies to all types of works which might cause significant damage or nuisance to community interests.

Previously, licences were generally only needed for hydropower development. This requirement has been interpreted more widely in recent years, so that other works which could involve damage or nuisance – such as major water supply or drainage projects and the abstraction of water for fish farms – have also become subject to the licensing process.

The Water Resources Act includes more detailed provisions on administrative procedures for licence applications. These specify the information to be included in an application and provide the legal authority to establish more detailed regulations. During the processing of an application, the applicant may be required to pay for investigations and studies needed to identify the advantages or drawbacks of the project.

An application is a public document and must be publicly notified at the applicant's expense in accordance with the provisions of the Planning and Building Act. The application is subjected to a process of public consultation before the NVE draws up its recommendation. A consultation process involving affected local authorities, county councils and any other relevant ministries also takes place during consideration by the Ministry.

The NVE has drawn up guidelines for considering many types of works in watercourses, such as aquaculture facilities, small power stations, refurbishment and upgrading of existing power stations, construction in or across watercourses, gravel extraction, measures to lower water levels, construction of embankments, and flood prevention schemes. These guidelines lay great emphasis on distinguishing between

large- and small-scale projects in terms of the level of consideration required.

At national level, the competent authorities pursuant to the Water Resources Act are as a general rule the King, the Ministry of Petroleum and Energy and the NVE. At regional and local level, the competent authorities are the NVE, the county governor, the local authority or any other body specified by the Ministry. Decisions made by the NVE can be appealed to the Ministry as the superior authority. Decision made by the Ministry can be appealed to the King in Council.

### 10.3.3 Other administrative authorities and legislation

In addition to the Water Resources Act, the Watercourse Regulation Act and the Industrial Concession Act, a number of other acts are of importance for water resource management. These are administered by other authorities than the Ministry of Petroleum and Energy and the NVE. The Planning and Building Act governs land use generally, and also applies to river systems and ground water. The Act includes provisions relating to land use planning, environmental impact assessment and procedures for dealing with building applications. The highest administrative authority for the Act is the Ministry of the Environment.

The Neighbouring Properties Act governs the legal relationship between neighbours, and not only between neighbouring properties. This Act is applicable unless otherwise specified by special legislation. This had been interpreted to mean that the Watercourses Act took precedence over the provisions of the Neighbouring Properties Act in matters concerning watercourses. Under the Water Resources Act, however, the Neighbouring Properties Act also applies to watercourse-related issues.

Pollution is regulated by the Pollution Control Act. The Ministry of the Environment also is the highest administrative authority for the Pollution Control Act, and the Norwegian Pollution Control Authority is the subordinate agency. The Water Resources Act defines the key concept of ‘works in watercourses’ in a way which excludes pollution. This will ensure that pollution of river systems continues to be governed by the Pollution Control Act, whereas other impacts are regulated by the Water Resources Act.

Many of the provisions of the Cultural Heritage Act are important for works in watercourses. Licences pursuant to the water resources legislation currently include conditions relating to steps to safeguard cultural monuments automatically protected pursuant to the Cultural Heritage Act. Cultural heritage conservation is also taken into account in several other ways in the Water Resources Act. Such considerations may result in a requirement to obtain a licence, a refusal to grant a licence, or the inclusion of terms requiring the developer to safeguard cultural monuments. The Ministry of the Environment is the highest administrative authority pursuant to the Cultural Heritage Act, but some powers have also been delegated to the county authorities.

The Outdoor Recreation Act governs the public right of access to and passage across other people’s property. The actual right to roam on lakes and rivers is governed by the Water Resources Act, while other activities (bathing, landing and mooring boats) are governed by the Outdoor Recreation Act. The Ministry of the Environment is the highest administrative authority for this Act as well, and the Directorate for Nature Management is the subordinate agency.

In addition, the Nature Conservation Act, the Wildlife Act, the Act relating to

salmonids and fresh-water fish, and the Aquaculture Act may all be applicable to works in watercourses.

## 10.4 The Water Resources Act

### 10.4.1 General principles

The Act Relating to River Systems and Ground Water (the Water Resources Act) came into effect on 1 January 2001 no. This statute is intended to ensure that river systems and ground water are used and managed in accordance with the interests of society. It takes a balanced view of natural resources and users, and is more resource-oriented than its predecessor.

Water resources themselves are renewable, but parts of the ecological system along and within watercourses are not. Nature conservation has an important place in the Water Resources Act. General provisions cover conduct in watercourses, and general requirements and restrictions are set out for watercourse use and for planning and implementation of works in them. Most of the requirements follow from the general provisions, and seek to take account of prevailing conditions in a watercourse.

The main objectives of the Water Resources Act are to promote sustainable development and to maintain biological diversity and natural processes in river systems. The intrinsic value of river systems, both as landscape elements and as habitats for plants and animals, is of central importance.

Several the provisions of the statute reflect the principle of sustainable development. These include the rules on conservation of waterside vegetation and on the minimum permitted rate of flow in watercourses. Both of these provisions are intended to provide good conditions for biological production and diversity in watercourses. In the long term, the

amount of ground water abstracted may not exceed the inflow.

Sanctions have been substantially strengthened by comparison with earlier legislation. More severe penalties, for instance, have been introduced to deal with environmental crime in watercourses.

### 10.4.2 The licensing system

As a general rule, nobody can initiate works in watercourses which may cause any significant damage or inconvenience to public interests there or in the sea without first obtaining a licence. This provision reflects the important position assigned to public interests in the Act. The expression 'public interests' is intended to be interpreted widely, and may include nature conservation, outdoor recreation, the landscape, fish stocks, economic activity and local communities.

The decision was taken not to transfer authority for large-scale hydropower projects, so that the competent authorities remained the same as before the Water Resources Act came into force. However, authority to issue licences for projects of more regional or local interest could be delegated to the county governor or local authority. The possibility of local authorities acting as the licensing authority for certain smaller projects can also be considered. This must be done gradually to allow these bodies to develop the necessary competence. The expertise of the Geological Survey of Norway is being applied to the management of ground water resources.

### 10.4.3 Special provisions relating to works in protected watercourses

The purpose of including watercourses in the protection plans for water resources has been to prevent any reduction of their conservation value

through hydropower developments. Even if a watercourse is protected against hydropower development, however, other types of developments may reduce its conservation value. To prevent this from happening, the Water Resources Act includes several special provisions relating to the management of protected watercourses. The most important of these is the statutory principle that whenever a decision of importance to protected watercourses is made pursuant to the Water Resources Act, considerable weight must be given to the conservation value of the watercourse. This will result, for example, in stricter treatment of licence applications for protected watercourses than for others.

## 10.5 Ground water

Before the Water Resources Act entered into force, there were no provisions on the abstraction of ground water. This natural resource will become increasingly important in the future. It must be protected against pollution and excessive use and, if resources are scarce, they must be distributed in accordance with the interests of society. Since the Pollution Control Act deals mainly with the qualitative aspects of environmental pressures, the Water Resources Act focuses primarily on quantitative issues.

The Act has retained the general rule which gives the landowner rights to watercourses, and has introduced provisions conferring similar rights to ground water. These provisions form part of the ordinary rights of ownership. Nevertheless, certain general restrictions on the right to utilise ground water have been imposed. The watercourse authorities are bound by these statutory constraints when processing licence applications.

One principle of the Watercourses Act which has not been retained in the Water Resources Act is that the first person to establish facilities for abstracting ground water is protected against all subsequent facilities which could reduce the amount of water available to them. Provisions relating to priorities for use and empowering the watercourse authorities to make further decisions on the distribution of water in the event of shortages both apply to ground as well as surface water. Abstraction of ground water must not contravene the provision on the minimum permitted rate of flow. A licence has been made mandatory for abstracting ground water or for activities with an impact on ground water. There was no similar provision in earlier legislation.

## 10.6 Preserving installations in watercourses as part of the cultural heritage

A varied cultural heritage is associated with the utilisation of water resources. This is often to be found in the immediate vicinity of watercourses, such as installations used for timber-floating, watermills, hydropower installations and canals.

The Ministry of Petroleum and Energy discharges its responsibility for the industry's cultural heritage through a permanent museum scheme administered by the NVE. This project aims to preserve, systematise and disseminate the history of Norway's water resource and energy administration and to conserve cultural artefacts which reflect that past. As part of this work, the NVE has established a partnership with the Norwegian Hydropower and Industry Museum at Tyssedal and the Norwegian Museum of Forestry in Elverum. A network for disseminating information

has also been created in collaboration with a number of other museums. The museum project's mission is to establish a nationwide network to preserve and disseminate the history of Norwegian water resources and energy. By conveying knowledge, the project will help to enhance awareness of and the importance of this sector.

### 10.7 The Water Framework Directive

The EU Water Framework Directive, which came into force on 22 December 2000, will provide guidelines for and determine water resource management throughout Europe. The Directive is an environment and resource directive that through the EEA agreement will lay the future framework for Norwegian and European water resource management. The Directive is a framework directive to which the relevant countries' laws, regulations and administrative follow-up must be adjusted. Its requirements are likely to affect management in relation to several statutes and must be taken into account by various government agencies and users of water resources. The Directive is not considered to confer any need for new or changed statutes in Norway.

It will help to maintain, protect and improve water quality and the aquatic environment, and ensure sustainable water use. The directive gives great weight to a unified consideration of the various factors which affect river basins and ground water. Water resource management will therefore be based on catchment areas. This means administration that is independent of municipality, county, or national borders. The Water Framework Directive places greater emphasis on biological conditions and deviations from natural states

rather than on analyses of total emissions and chemical content of water. The Directive has a long, time perspective and rolling plans for follow-up at regular intervals by the Directive.

The minimum environmental goal to be attained, designated 'good water status', is to be achieved no later than 15 years after the directive comes into force. Nevertheless, the Directive opens up for national adjustments both through exemption provisions and opportunity to nominate water sources as so-called 'strongly modified'. This includes water resources that because of physical intervention will not be able to achieve good water status, but where measures, because of the considerable societal benefit, are desired to be upheld. These could be subject to a slightly milder environmental requirement, defined as 'good ecological potential'. Typical interventions could be similar to the Norwegian hydropower control.

In Norway, implementation of the Water Framework Directive has been controlled by a Ministerial Group and a Directorate Group. In October 2004, the Ministry of the Environment was appointed responsibility for the overall coordination of implementation of the Directive in Norway. The county administrator was appointed as coordinating authority at regional level. Today's division of responsibility with respect to law and tools is presumed to still apply.

The proposed regulations for frameworks for management that will implement the Directive in Norwegian law were sent on 24 November 2005 to general hearing from Statens forurensningstilsyn (SFT – the Norwegian Pollution Control Authority) with deadline 10 March 2006. The regulation is proposed pursuant to the Planning and Building Act, the Pollution Act and the Water Resources Act.

